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## **PERFORMANCE BASED SEISMIC ENGINEERING**

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### **ABSTRACT**

Performance based seismic engineering is the modern approach to earthquake resistant design. Rather than being based on prescriptive mostly empirical code formulations, performance based design is an attempt to predict buildings with predictable seismic performance. Therefore, performance objectives such as life-safety, collapse prevention, or immediate occupancy are used to define the state of the building following a design earthquake. In one sense, performance based seismic design is limit-states design extended to cover the complex range of issues faced by earthquake engineers. This seminar provides a basic understanding of the promises and limitations of performance based seismic engineering. The state-of-the-art methodologies and techniques embodied in the two leading guidelines on this subject (ATC-40 and FEMA 273/274) are provided to illustrate the practical applications of the methods discussed.

### **KEY WORDS**

Performance Based Design, Seismic, Capacity, Demands, Pushover, ATC-40, FEMA-273, FEMA-274.

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